

IN THE CLAIMS

1. (Currently Amended) An apparatus for combining first and second image data of an object, comprising:

an ultrasound detector for repeatedly generating first image data of the object;

a combination device;

at least one data connection;

structure configured for at least one of storing and receiving second image data of the object;

wherein said combination device is adapted to combine said first image data and said second image data;

wherein said at least one data connection is designed to transfer from said ultrasound detector to said combination device at least [said] geometry data;

wherein said geometry data comprise data defining at least one of the following:

a) information concerning at least one spatial dimension of an image unit of the first image data[[;]]

b) information concerning an image position of at least a part of an image, which is represented by the first image data, relative to a reference point of the ultrasound detector or relative to a reference point or reference object in the ultrasound image;

c) information concerning an orientation of the ultrasound image relative to a reference point or a reference object of the ultrasound detector; and

d) information concerning a region or an area, which is actually covered by an ultrasound image that is represented by the first image data.

Please cancel claims 2-51.

Please add the following new claims.

52. (New) A method for displaying in an image combination device images of an object, comprising:

storing second image data of an object, from which second images can be generated, in a data storage structure, said second image data detected using a second imaging system;

transferring, from an ultrasound imaging detector system having an ultrasound imaging detector to said image combination device, (1) first image data of said object and (2) additional data;

wherein said additional data comprises at least one of (a) spatial dimension of an image

unit of said first image data and (b) orientation of a first image defined by said first image data relative to orientation of said ultrasound imaging detector;

wherein said first image data is detected from said object by said ultrasound imaging detector and said additional data is obtained using said ultrasound imaging detector system;

wherein said image combination device uses said additional data to determine from said second image data at least one of orientation and scale for display of said second images; and displaying, in said image combination device, said second images of said object.

53. (New) The method of claim 52 further comprising storing said additional data in a data storage structure that is readable by said image combination device.

54. (New) The method of claim 52 wherein said additional data further comprises at least one of the following:

- (c) number of image units between two image features in said first image data; and
- (d) number of image units between an image feature in said first image and said ultrasound imaging detector.

55. (New) The method of claim 52 wherein said additional data comprises both (a) and (b).

56. (New) The method of claim 52 wherein said image unit is a pixcel and said spatial dimension of an image unit of said first image data is a spatial dimension associated with said pixel.

57. (New) The method of claim 52 further comprising:

displaying, in said image combination device, first images using said additional data and said first image data, wherein said image combination device uses said additional data to maintain constant at least one of said relative orientation and said ratio of scale, between concurrently displayed first and second images.

58. (New) The method of claim 52 further comprising transferring from said ultrasound imaging detector system to said image combination device data indicating position of said ultrasound imaging detector relative to a position sensor.

59. (New) The method of claim 52 further comprising transferring from said ultrasound imaging detector system to said image combination device data indicating identification of an ultrasound probe of said ultrasound imaging detector system.

60. (New) The method of claim 52 further comprising a user choosing a spatial dimension within a range of spatial dimensions of said ultrasound imaging detector.

61. (New) The method of claim 52 further comprising a user operating a control

element thereby adjusting a pixel size provided by said ultrasound imaging detector system.

62. (New) The method of claim 52 further comprising a user operating a control element thereby changing orientation of at least one of said first images provided by said image combination device.

63. (New) The method of claim 52 further comprising transferring from said ultrasound imaging detector system to said image combination device repetition frequency of generation of first images.

64. (New) The method of claim 52 further comprising:

selecting a penetration depth for said first image data by limiting a time for detection of ultrasound echo signals by said ultrasound imaging detector;

determining said penetration depth, in said ultrasound imaging detector system; and transmitting said penetration depth to said combination device.

65. (New) The method of claim 52 further comprising:

determining, in said ultrasound imaging detector system, a width of an image recording area; and

transmitting said width to said combination unit.

66. (New) An apparatus for displaying in an image combination device images of an object, comprising:

a data storage structure for storing second image data of an object from which second images can be generated in, said second image data detected using a second imaging system;

an ultrasound imaging detector system having an ultrasound imaging detector for detecting first image data of an object and for acquiring associated additional data;

data transfer structure for transferring from said ultrasound imaging detector system to said image combination device said first image data and said additional data;

display structure for displaying said second images;

wherein said additional data comprises at least one of (a) spatial dimension of an image unit of said first image data and (b) orientation of a first image defined by said first image data relative to orientation of said ultrasound imaging detector;

wherein said image combination device is designed to use said additional data and said second image data to determine at least one of orientation and scale in display of said second images.

67. (New) The apparatus of claim 66 further comprising a data storage structure that is readable by said image combination device for storing said additional data.

68. (New) The apparatus of claim 66 wherein said additional data further comprises at least one of the following:

(c) number of image units between two image features in said first image data; and

(d) number of image units between an image feature in said first image and said ultrasound imaging detector.

69. (New) The apparatus of claim 66 wherein said additional data comprises both (a) and (b).

70. (New) The apparatus of claim 66 wherein said image unit is a pixel and said spatial dimension of an image unit of said first image data is a spatial dimension associated with said pixel.

71. (New) The apparatus of claim 66 further comprising displaying, in said image combination device, first images using said additional data and said first image data, wherein said image combination device uses said additional data to maintain constant at least one of said relative orientation and said ratio of scale, between concurrently displayed first and second images.

72. (New) The apparatus of claim 66 further comprising structure for transferring from said ultrasound imaging detector system to said image combination device data indicating position of said ultrasound imaging detector relative to a position sensor.

73. (New) The apparatus of claim 66 further comprising structure for transferring from said ultrasound imaging detector system to said image combination device data indicating identification of an ultrasound probe of said ultrasound imaging detector system.

74. (New) The apparatus of claim 66 further comprising control structure enabling a user to choose a spatial dimension within a range of spatial dimensions of said ultrasound imaging detector.

75. (New) The apparatus of claim 66 further comprising a control element operable by a user for adjusting a pixel size provided by said ultrasound imaging detector system.

76. (New) The method of claim 66 further comprising a control element operable by a user for changing orientation of at least one of said first images provided by said image combination device.

77. (New) The apparatus of claim 66 further comprising structure for transferring from said ultrasound imaging detector system to said image combination device repetition frequency of generation of first images.

78. (New) The apparatus of claim 66 further comprising:

structure in said ultrasound imaging detector system for selecting a penetration depth for said first image data by limiting a time for detection of ultrasound echo signals by said ultrasound imaging detector, for determining said penetration depth, and for transmitting said penetration depth to said combination device.

79. (New) The apparatus of claim 66 further comprising structure in said ultrasound imaging detector system for determining, a width of an image recording area and for transmitting said width to said combination unit.

80. (New) The apparatus of claim 66 further comprising an additional data connection between said ultrasound imaging detector system and said image combination device for transferring said additional information from said ultrasound imaging detector system to said image combination device.

81. (New) The apparatus of claim 66 further comprising an ultrasound control unit of said ultrasound imaging detector system for inputting control settings to said ultrasound imaging detector and also for transmitting said settings to said image combination device.

82. (New) The apparatus of claim 81 wherein said control settings comprise at least one of penetration depth and range of an ultrasound image.

83. (New) A method of making an apparatus for displaying in an image combination device images of an object, comprising:

providing a data storage structure for storing second image data of an object from which second images can be generated in, said second image data detected using a second imaging system;

providing an ultrasound imaging detector system having an ultrasound imaging detector for detecting first image data of an object and for acquiring associated additional data;

providing a data transfer structure for transferring from said ultrasound imaging detector system to said image combination device said first image data and said additional data;

providing a display structure for displaying said second images;

wherein said additional data comprises at least one of (a) spatial dimension of an image unit of said first image data and (b) orientation of a first image defined by said first image data relative to orientation of said ultrasound imaging detector;

wherein said image combination device is designed to use said additional data and said second image data to determine at least one of orientation and scale in display of said second images.